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MICS

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Federal Communications Commission
Office of Secretary

From: "Dr. William Scanlon" <williams@nibec-s1.nibec.ulst.ac.uk>
To: K2DOM.K2PO1(GTHOMSON)
Date: Tue, Apr 13, 1999 9:02 AM
Subject: 403 MHz MICS proposal - RF Safety

> Dear Gene Thompson,
>
> only yesterday I came across the FCC notice of proposed rule making:
> FCC99-23 regarding the use of 403 MHz for medical implant
> communications. I understand that I have missed the deadline for
> official comments but I would like to make the following points:
>
> 1. I have been researching active UHF transmission for medical
> implants since 1994, at frequencies of 418 MHz and 916.5 MHz and more
> recently at 403 MHz (following the European proposal TR70-03).
>
> 2. The main issue that I have is with the paragraph 13: Exposure to RF
> fields.
>
> I have recently completed some research regarding this (results to be
> presented at an URSI conference this summer and a full paper in
> preparation). The study looked at an implanted source, scaled to 25
> microwatts eirp and located subcutaneously at the clavical. The
> results indicate that care must be taken to adequately insulate the
> source antenna from the surrounding tissue, otherwise international
> (and ANSI/IEEE) guidelines for exposure MAY be exceeded. This
> research was based on calculating peak SAR (W/kg) for a realistic
> human body model.
>
> In paragraph 13, it talks about power density (W/m2) - this is
> incorrect as the exposure system here is a near-field one and cannot
> be simply treated in the same way as a far-field broadcast type
> scenario.
>
> The upshot of this is that manufacturers MUST demonstrate that their
> implanted device will not exceed the permissible limits, much in the
> same way as for cellular telephones. I strongly urge you NOT to exempt
> this band from a careful consideration of health effects. If
> appropriate, I will send you some more technical details on this.
>
>
> I also have results that may indicate that 915 MHz could also be
> feasible for MICS and I don't quite understand why this band (868-870
> in Europe) has been discounted along with 450 MHz up.
>
>
> Please let me know if there is a more formal way to comment, or
> indicate if you wish me to send you copies of my papers, etc.
>
> Best Regards,
>
> Dr William Scanlon
> The Northern Ireland Bio-Engineering Centre
> University of Ulster

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